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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/758,309

01/15/2004

Volker Krueger

564-12835-USCQ

5364

44871 7590 02/13/2007
MADAN, MOSSMAN & SRIRAM, P.C.
2603 AUGUSTA
SUITE 700
HOUSTON, TX 77057

EXAMINER

BOMAR, THOMAS S

ART UNIT

PAPER NUMBER

3672

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

02/13/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/758,309

Applicant(s)

KRUEGER, VOLKER

Examiner

Shane Bomar

Art Unit

3672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-27 is/are pending in the application.
- 4a) Of the above claim(s) 22-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-21, 26 and 27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 1, 4, 11, 12, 21, 26, and 27 are objected to because of the following informalities:
 - a. in claim 1, the first two lines of part (b), it appears that the recitation of “applying force on the wellbore by each in the ribs of the first plurality of stabilizer” should most likely be --applying a force on the wellbore by each of the ribs in the first plurality of ribs--;
 - b. in claim 4, line 2, it appears that the word --a-- should be between “applying” and “force”;
 - c. in claim 11, line 3, the recitation of “or second set of ribs” lacks proper antecedent basis since only the first set is seen in claims 1, 9, or 10 (the second set is defined in claim 2);
 - d. in claim 12, line 1, the claim is said to depend from a cancelled claim, although it appears that the claim most likely depends from claim 2;
 - e. claim 21 is said to be (new) although it should be labeled as (currently amended);
 - f. in claim 26, lines 2, the recitation of “a second set of ribs” still appears to lack proper antecedent basis since a first set of ribs has not been defined in claim 21; and
 - g. in claim 27, line 1, the recitation of “included” should most likely be --includes--Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-4, 6, 8, 12, 21, 26, and 27 are rejected under 35 U.S.C. 102(e) as being anticipated by US 6,213,226 to Eppink et al.

Regarding claim 1: Eppink et al disclose a method for controlling the trajectory of a wellbore that involves the following steps:

- Conveying a drilling assembly **270** in the wellbore, said drilling assembly including a first adjustable stabilizer **278** having independently adjustable ribs and a second stabilizer **276**.
- Applying a force on the wellbore by the independently adjustable ribs to adjust a position of a first center of said first adjustable stabilizer in the wellbore relative to a second center of said second stabilizer and with respect to the centerline of the wellbore to drill the wellbore along a desired wellbore trajectory (see Figs. 34-39 and associated description; figs. 47-48; 16:19-21 and 22:56-65).

Regarding claim 2: The second stabilizer comprises an adjustable stabilizer with independently adjustable ribs (22:6-13, wherein the fixed stabilizer 204 has been advantageously replaced with adjustable stabilizer 276).

Regarding claim 3: The second stabilizer is a fixed blade stabilizer (21:30-33; this passage teaches that only one of the stabilizers needs to be adjustable).

Regarding claim 4: The independently adjustable ribs of the second adjustable stabilizer in claim 2 also apply a force on the wellbore to adjust a position of a first center

of said first adjustable stabilizer in the wellbore relative to a second center of said second stabilizer and with respect to the centerline of the wellbore (fig. 35 and 22:56-65).

Regarding claim 6: The second stabilizer has an under-gage outer diameter (see claim 6).

Regarding claim 8: The method further involves drilling said wellbore along a predetermined well path (1:5-10).

Regarding claim 12 (as best understood to depend from claim 2): The method further involves adjusting force on the ribs in the first plurality of ribs and the second plurality of ribs based at least in part on a pre-selected wellbore trajectory (see Fig. 39).

Regarding claim 21: Eppink et al disclose a method for controlling drilling direction in a wellbore comprising: (a) drilling the wellbore with a drilling assembly including a drill bit rotated by a drilling motor, a first adjustable stabilizer and a second stabilizer; and (b) controlling a drilling direction of the drill bit by adjusting a position of a first center of said first adjustable stabilizer relative to a second center of said second stabilizer and with respect to a wellbore centerline along the drilling assembly (see Fig. 35).

Regarding claim 26: The adjustable stabilizer has a set of ribs containing a plurality of independently controllable ribs 40/42 to control drilling direction (16:19-21 and 22:56-65).

Regarding claim 27: The drilling assembly includes a drill bit that is rotated by a drilling motor and wherein the first stabilizer is on a portion of the motor (22:6-11).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 7, 9-11, and 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eppink et al in view of US 5,220,963 to Patton.

Regarding claims 7, 9-11, 13, and 17-19: Eppink et al disclose a system for controlling a trajectory of a wellbore. The system includes the following features:

- A drilling assembly **270** deployed in said wellbore by a rotatable tubular member, said drilling assembly including a drill bit at an end thereof that is rotatable by a drilling motor (22:62-65) carried by the drilling assembly, said wellbore having a centerline along the assembly.
- A first adjustable stabilizer **278** disposed in said drilling assembly having a first set of ribs **40/42** spaced around said first adjustable stabilizer, with each rib being independently radially extendable (figs. 47-48; 22:56-65 and 16:19-21).
- A second stabilizer **204/276** spaced apart from said first adjustable stabilizer.
- A controller in the drilling assembly adjusting the position of a first center of the first adjustable stabilizer in the wellbore relative to a second center of the second stabilizer in the wellbore and the centerline of the wellbore for controlling the trajectory of the wellbore wherein the position of the first center relative to the second center is determined at least in part based upon a desired wellbore trajectory (see Figs. 34-39 and 16:50-63).

However, it is not specifically taught that the method or system includes a sensor for measuring inclination or determining a parameter indicative of direction of drilling of said wellbore so that drilling direction of said wellbore can be altered if said parameter is outside a predetermined limit, or that the desired wellbore trajectory is stored in the memory of the controller.

Patton teaches a method and system for controlling the trajectory of a wellbore similar to that of Eppink et al. It is further taught that the method or system includes a sensor for measuring inclination and/or for determining a parameter indicative of direction of drilling of said wellbore so that drilling direction of said wellbore can be altered if said parameter is outside a predetermined limit (21:40-24:36). It would have been obvious to one of ordinary skill in the art, having the teachings of Eppink et al and Patton before him at the time the invention was made, to modify the method and system taught by Eppink et al to include the memory, sensors, and methods of measuring of Patton, in order to obtain a calculated drill profile (23:3-19 of Patton). One would have been motivated to make such a combination since Eppink et al is silent to the directional control system electronics and sensors, although one of ordinary skill in the art knows that the directional drilling could not be accomplished without some sort of sensors to determine inclination and direction of the downhole components, which Patton have shown to be notoriously known.

Regarding claim 14: The second stabilizer is a fixed blade stabilizer (21:30-33; of Eppink).

Regarding claim 15: The second stabilizer comprises an adjustable stabilizer with independently adjustable ribs (22:6-13 of Eppink, wherein the fixed stabilizer 204 has been advantageously replaced with adjustable stabilizer 276).

Regarding claim 16: The second stabilizer has an under-gage outer diameter (see claim 6 of Eppink).

Regarding claim 20: The position of the second stabilizer is adjusted by changing the extension of at least one rib of said second set of ribs (see Fig. 39 of Eppink).

Response to Arguments

6. Applicant's arguments, see pages 8-9, filed January 8, 2007, with respect to the 102(b) rejections in view of Patton have been fully considered and are persuasive. The rejection of claims 1-12 over Patton has been withdrawn.

7. Applicant's arguments with respect to Eppink et al (under 35 USC 102(e) and 103(a)) have been fully considered but they are not persuasive. The Applicant argues that Eppink cannot anticipate the claims because there is no teaching for adjusting the positions of the centers of the first and second stabilizers with respect to the wellbore centerline, or for independently controllable ribs. With regards to the first argument, the Applicant is respectfully directed to Figure 35, wherein it is apparent that the centers of the two stabilizers 276 and 278 are adjusted into positions with respect to each other, as well as with respect to the centerline of the wellbore. With regards to the second argument, it must first be noted that claim 21 does not call for independently adjustable ribs. Furthermore, Eppink discloses in column 16, lines 19-21 and in column 22, lines 56-65 that the individual blades of each stabilizer can be operated independently and that such an embodiment can be used with any of the other stabilizer embodiments, such as in Figure 35. Therefore, the rejections in view of Eppink, either alone or in combination, are still deemed as applicable to the Applicants claimed invention.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shane Bomar whose telephone number is 571-272-7026. The examiner can normally be reached on Monday - Thursday from 6:00am to 2:30pm. The examiner can also be reached on alternate Fridays.

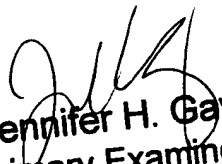
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on 571-272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3672

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David J. Bagnell
Supervisory Patent Examiner
Art Unit 3672

tsb

February 6, 2007


Jennifer H. Gay
Primary Examiner